

Claims

1. Device for determination of spatial co-ordinates of an object (2) with:

- a projector (3) which projects onto the object (2) a pattern (4) with known projection data,
- a camera (6) which creates an object image (8) of the pattern (4) projected onto the object (2), and with
- a data processing unit (7) connected downstream from the camera (6), which determines spatial co-ordinates of the object (2) from the object image (8) and the known projection data,

characterized in that,

at least one further camera (6) creates a further object image (9) and the data processing unit (7) determines additional spatial co-ordinates of the object (2) from the object images (8, 9) by means of a triangulation method.

2. Device as claimed in claim 1,

characterized in that,

the pattern (4) contains redundantly-encoded projection data.

3. Device as claimed in claim 1 or 2,

characterized in that,

Epipolar lines (16, 17) pass through a plurality of marks of the pattern (4).

4. Device as claimed in one of the claims 1 to 3,

characterized in that,

the data processing unit (7) restricts the search for corresponding image points ( $S_1$ ,  $S_r$ ) to problem areas in which an evaluation of the pattern images (8, 9) only produces an erroneous result.

5. Method for determining spatial co-ordinates of an object

(2) with the following steps:

- Projection of a pattern (4) with known projection data onto an object (2);
- Creation of an object image (8) with the aid of a camera (6); and
- Determination of the spatial co-ordinates from the known projection data in a data processing unit (7),

characterized in that,

with the aid of a further camera (6) a further object image (9) is recorded and that, if the spatial co-ordinates are determined incorrectly, additional spatial co-ordinates of the object (2) are determined on the basis of the projection data and one of the pattern images (8, 9) by searching for corresponding image points ( $S_1$ ,  $S_r$ ) in the object images (8, 9) and a subsequent triangulation.

6. Method as claimed in claim 5,

characterized in that,

corresponding pixels ( $S_1$ ,  $S_r$ ) are searched for along the epipolar lines (16, 17).